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EXAMINER

MONIKANG, GEORGE C

ART UNIT	PAPER NUMBER
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2615

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/789,425

Applicant(s)

PETROFF, MICHAEL L.

Examiner

George C. Monikang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 5, 10, 16, 21, 24 & 28 are objected to because of the following informalities: The claim recites, "a second amplifier having an input and output" and then further recites "the first amplifier input coupled to the filter output". These limitations do not flow with each other. The "first amplifier input" will be read and analyzed as the second amplifier input. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 & 18 are rejected under 35 U.S.C. 102(b) as being anticipated by applicants admitted prior art (hereinafter referred to as AAPA, fig. 1; paras 0002-0006).

Re Claim 1, AAPA discloses a speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise (para 0005) comprising: means for receiving the reproduced audio program signal (fig. 1: Sin; para 0005); a microphone for monitoring ambient noise signals and for providing a microphone output signal (fig. 1: MIC1; para 0005); means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off (para 0005: process control signal S3 is only provided when program

signal S4 is in off state), and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on (para 0005: process control signal S3 is only provided when program signal S4 is in off state), such that the microphone output signal includes ambient noise signal components without including reproduced program signal components (para 0005: system operates when S_{in} is below threshold level, if S_{in} is above threshold level then system will be in ON state which will allow reproduced program signal components); and a signal process (fig. 1: P1), coupled to the means for receiving and the means for enabling/disabling (fig. 1: P1, S_{in} & S3; para 0005), including a first transfer function having a signal process output signal (fig. 1: f1; para 0005-0006), the first transfer function providing incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing amplitude of the microphone output signal (para 0006), and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled (paras 0005-0006).

Claim 18 has been analyzed and rejected according to claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA.

Re Claim 2, AAPA does not disclose the speaker system according to claim 1, wherein the incremental gain adjustments are in steps of between about 1 dB and about 10 dB.

However, such a limitation is the inventor's preference thus it would have been obvious for AAPA to modify the speaker system for the motivation of providing a broad sound range.

Claim 19 has been analyzed and rejected according to claim 2.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 5 & 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA as applied to claim 1 above, in view of Bosnak, US Patent 4,554,533.

Re Claim 3, AAPA discloses the speaker system according to claim 1, but fails to disclose further comprising a first amplifier having an input and an output, the first amplifier input coupled to the signal process output signal of the signal process and the

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first amplifier output coupled to a first speaker input of a first speaker. However, Bosnak does (fig. 1: 20, 14').

Taking the combined teachings of AAPA and Bosnak as a whole, one skilled in the art would have found it obvious to modify the speaker system of AAPA with further comprising a first amplifier having an input and an output, the first amplifier input coupled to the signal process output signal of the signal process and the first amplifier output coupled to a first speaker input of a first speaker as taught in Bosnak (fig. 1: 20, 14') so that the system could produce higher levels of sound.

Re Claim 5, the combined teachings of AAPA and Bosnak disclose the speaker system according to claim 3, further comprising: a low-pass filter having an input and an output (Bosnak, fig. 1: 52), the filter input coupled to the signal process output signal of the signal process and the filter output augmenting the first speaker output in a low frequency region (Bosnak, fig. 1: 20, 52); and a second amplifier having an input and output (Bosnak, fig. 1: 14), the first amplifier input coupled to the filter output and the first amplifier output coupled to a second speaker input of a second speaker (Bosnak, fig. 1: 14, 10).

Claim 20 has been analyzed and rejected according to claim 3.

Claim 21 has been analyzed and rejected according to claim 5.

Claims 4 & 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Bosnak, US Patent 4,554,533 as applied to claim 3 above, and in further view of Tanaka et al, US Patent 5,88,065.

Re Claim 4, the combined teachings of AAPA and Bosnak disclose the speaker system according to claim 3, but fails to disclose wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm). However, Tanaka et al does (col. 11, lines 52-67).

Taking the combined teachings of AAPA, Bosnak and Tanaka et al as a whole, one skilled in the art would have found it obvious to modify the speaker system of AAPA and Bosnak with wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm) as taught in Tanaka et al (col. 11, lines 52-67) to provide direct but incremental amplitude compensation.

Claim 6 has been analyzed and rejected according to claim 4.

Claims 7, 12-13, 22 & 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, in view of Alyward et al, US Patent Pub. 2004/0105559 A1.

Re Claim 7, AAPA discloses a speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise (para 0005) comprising: means for receiving the reproduced audio program signal (fig. 1: Sin; para 0005); a microphone for monitoring ambient noise signals and for providing a microphone output signal (fig. 1: MIC1; para 0005); means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off (para 0005: process control signal S3 is only provided when program signal S4 is in off state), and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on (para 0005:

process control signal S3 is only provided when program signal S4 is in off state), such that the microphone output signal includes ambient noise signal components without including reproduced program signal components (para 0005: system operates when S_{in} is below threshold level, if S_{in} is above threshold level then system will be in ON state which will allow reproduced program signal components); and a signal process (fig. 1: P1), coupled to the means for receiving and the means for enabling/disabling (fig. 1: P1, S_{in} & S3; para 0005), including a transfer function having a signal process output signal (fig. 1: f1; para 0005-0006), the transfer function providing increasing high frequency response of the reproduced audio program signal as a function of a decreasing amplitude of the microphone output signal (para 0006), and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled (paras 0005-0006); but fails to disclose wherein the transfer function being a second transfer function. However, Aylward et al does (para 0004).

Taking the combined teachings of AAPA and Aylward et al as a whole, one skilled in the art would have found it obvious to modify the speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise (para 0005) comprising: means for receiving the reproduced audio program signal (fig. 1: S_{in} ; para 0005); a microphone for monitoring ambient noise signals and for providing a microphone output signal (fig. 1: MIC1; para 0005); means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off (para 0005: process control signal S3 is only provided

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when program signal S4 is in off state), and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on (para 0005: process control signal S3 is only provided when program signal S4 is in off state), such that the microphone output signal includes ambient noise signal components without including reproduced program signal components (para 0005: system operates when Sin is below threshold level, if Sin is above threshold level then system will be in ON state which will allow reproduced program signal components); and a signal process (fig. 1: P1), coupled to the means for receiving and the means for enabling/disabling (fig. 1: P1, Sin & S3; para 0005), including a transfer function having a signal process output signal (fig. 1: f1; para 0005-0006), the transfer function providing increasing high frequency response of the reproduced audio program signal as a function of a decreasing amplitude of the microphone output signal (para 0006), and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled (paras 0005-0006) of AAPA with wherein the transfer function being a second transfer function as taught in Alyward et al (para 0004) to compensate for widely varying changes in sound levels that can be annoying to listeners.

Claim 12 has been analyzed and rejected according to claim 7.

Claim 13 has been analyzed and rejected according to claims 2 & 7.

Claim 22 has been analyzed and rejected according to claim 7.

Claim 25 has been analyzed and rejected according to claim 7.

Claim 26 has been analyzed and rejected according to claims 2 & 7.

Claims 8, 10, 14, 16, 23-24 & 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Alyward et al, US Patent Pub. 2004/0105559 A1 as applied to claim 7 above, in view of Bosnak, US Patent 4,554,533.

Re Claim 8, the combined teachings of AAPA and Alyward et al disclose the speaker system according to claim 7, but fails to disclose further comprising a first amplifier having an input and an output, the first amplifier input coupled to the signal process output signal of the signal process and the first amplifier output coupled to a first speaker input of a first speaker. However, Bosnak does (fig. 1: 20, 14).

Taking the combined teachings of AAPA, Alyward et al and Bosnak as a whole, one skilled in the art would have found it obvious to modify the speaker system of AAPA and Alyward et al with further comprising a first amplifier having an input and an output, the first amplifier input coupled to the signal process output signal of the signal process and the first amplifier output coupled to a first speaker input of a first speaker as taught in Bosnak (fig. 1: 20, 14) so that the system could produce higher levels of sound.

Re Claim 10, the combined teachings of AAPA, Alyward et al and Bosnak disclose the speaker system according to claim 8, further comprising: a low-pass filter having an input and an output (Bosnak, fig. 1: 52), the filter input coupled to the signal process output signal of the signal process and the filter output augmenting the first speaker output in a low frequency region (Bosnak, fig. 1: 20, 52); and a second amplifier having an input and output (Bosnak, fig. 1: 14), the first amplifier input coupled to the

filter output and the first amplifier output coupled to a second speaker input of a second speaker (Bosnak, fig. 1: 14, 10).

Claim 14 has been analyzed and rejected according to claim 8.

Claim 16 has been analyzed and rejected according to claim 10.

Claim 23 has been analyzed and rejected according to claim 8.

Claim 24 has been analyzed and rejected according to claim 10.

Claim 27 has been analyzed and rejected according to claim 8.

Claim 28 has been analyzed and rejected according to claim 10.

Claims 9, 11, 15 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, Alyward et al, US Patent Pub. 2004/0105559 A1 and Bosnak, US Patent 4,554,533 as applied to claim 3 above, and in further view of Tanaka et al, US Patent 5,88,065.

Re Claim 9, the combined teachings of AAPA, Alyward and Bosnak disclose the speaker system according to claim 8, but fails to disclose wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm). However, Tanaka et al does (col. 11, lines 52-67).

Taking the combined teachings of AAPA, Alyward et al, Bosnak and Tanaka et al as a whole, one skilled in the art would have found it obvious to modify the speaker system of AAPA, Alyward et al and Bosnak with wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100

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centimeters (cm) as taught in Tanaka et al (col. 11, lines 52-67) to provide direct but incremental amplitude compensation.

Claim 11 has been analyzed and rejected according to claim 9.

Claim 15 has been analyzed and rejected according to claim 9.

Claim 17 has been analyzed and rejected according to claim 9.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Monikang whose telephone number is 571-270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

George Monikang

7/23/2007


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